



**Gurney's Pitta Research and Conservation in  
Thailand and Myanmar**

**First Annual Report  
January 2005 – March 2006**

**Submitted by**



## 1. Darwin Project Information

Project Ref. Number	162/13/030
Project Title	Gurney's Pitta research and conservation in Thailand and Myanmar
Country(ies)	Thailand and Myanmar
UK Contractor	RSPB
Partner Organisation(s)	<b>Thailand:</b> Bird Conservation Society of Thailand (BCST), Forest Restoration Research Unit (FORRU), National Parks, Wildlife and Plant Conservation Department; <b>Myanmar:</b> Biodiversity and Nature Conservation Association (BANCA), BirdLife International Indochina Programme
Darwin Grant Value	£109,992 (total), £46,204 (this period)
Start/End dates	January 2005 to March 2008
Reporting period (1 Apr 200x to 31 Mar 200y) and annual report number (1,2,3..)	1 April 2005 to 31 March 2006 Annual Report No. 1
Project website	in prep
Author(s), date	Paul Donald, April 2006

## 2. Project Background

Gurney's Pitta *Pitta gurneyi* is a lowland forest bird species confined to peninsular Thailand and extreme southern Myanmar. It is currently listed by IUCN as Critically Endangered, because of its very small and rapidly declining population at the only known site in Thailand. The production and agreement of a Species Recovery Plan in Thailand in 2002, quickly followed by the species' rediscovery in Tanintharyi Division, southern Myanmar, in 2003, renewed hopes that the species could be saved from extinction, after two decades in which successive conservation attempts had failed to do more than slow the seemingly unstoppable decline. The current project aims to fulfil these hopes by supporting key actions from the recovery plan in Thailand (particularly those relating to research, reforestation and community development) and by undertaking research on the newly discovered population in Myanmar and feeding the results of this research into ongoing efforts to secure protected area status for lowland forests in southern Myanmar. At the same time, the project aims to use the opportunity of working with conservationists in Thailand and Myanmar to build their capacity, particularly in terms of scientific research.

### **3. Project Purpose and Outputs**

The project log-frame is given as Annex 1, which sets out the project purpose and outputs. It also indicates achievements and progress. The project purpose and outputs remain the same as in the original application.

### **4. Progress**

#### *History of the project*

This is the first year of the Darwin project, but it follows several years of work on this species by RSPB, BCST and the BirdLife Indochina Programme. In 2002, RSPB, BCST and the Thai Government signed an MoU to agree to take steps to try to avert the extinction of the species. Later that year, RSPB and BCST funded and organised a Species Recovery Plan workshop, hosted by the Department of National Parks, which brought together all key stakeholders in Thailand, including NGOs, Government and local community representatives. From this meeting came a Gurney's Pitta Recovery Plan, agreed by all stakeholders, which sets out a vision for the species' future in Thailand and key actions to ensure it. The current project aims to support this Recovery Plan by undertaking or facilitating a number of outputs from it. These fall largely into the technical areas of research, reforestation and technical capacity building. In 2003, an expedition by the BirdLife Indochina Programme and BANCA led to the rediscovery of the species in southern Myanmar after an absence of nearly a century. There are now plans to extend the boundaries of the proposed Lenya National Park to include lowland forests of key importance to this species. The current project aims to identify these key areas for this species in southern Myanmar, to assess its habitat requirements and population, and so to guide the process of establishing Lenya NP.

#### *Progress and achievements*

Since the project started, considerable progress has been made towards the outcomes of the project (Annex 1). In southern Thailand, a full survey has revealed a population of at least 20 pairs (Annex 2), indicating that although the population is still small, it has at least been stabilised, since a full survey in 1999 suggested a similar number. This successful halting of decades of decline is likely to be largely due to improvements in forest protection since the 2002 workshop, and because of the better information being provided to forest protection staff by researchers associated with this project. This means that more targeted patrolling of core Gurney's Pitta areas has led to better prevention of illegal plantings, and the area of forest being lost to illegal encroachment has fallen to virtually nothing. Indeed, the amount of new reforestation now appears to be exceeding the loss of forest, and much of this reforestation has been undertaken by local people, leading to hopes that this will reduce the likelihood of future encroachment. In October 2005, for example, 100 rai (16 hectares) were replanted, with the support of the Oriental Bird Club. The survey also showed, however, that many of the remaining pairs exist in small and isolated forest fragments, leading to plans being developed to re-connect these fragments through reforestation. A further problem the survey has highlighted is that only 4 of the 20 pairs are in the Wildlife Sanctuary, the remainder being in the Reserve Forest, which enjoys a lower legal protection status. Nest success also appears to be very low, largely because of predation of eggs and chicks by snakes, although intensive nest

guarding has increased the number of chicks being produced at a small number of nests. Following the recognition of snakes as key Gurney's Pitta nest predators, the Department of National Parks has initiated a research programme on snakes in the Gurney's Pitta core area. It is clear that despite recent successes in overturning decades of deforestation and so stabilising the population, much remains to be done to ensure the future viability of this population.

In February 2005, two RSPB researchers delivered a training workshop at Khao Yai National Park in technical methods in bird research to 10 Thai research staff (see Photographs). This workshop covered issues such as radio tracking, nest monitoring and statistical analysis. Practical demonstrations of radio tracking were given to all participants, and the workshop was followed by a week of field research aimed at testing radio tracking methods on another pitta species elsewhere (Blue Pitta) to test the safety of the method before applying it to Gurney's Pitta (Photographs). Thus all participants had the opportunity to reinforce their formal training through practical experience. A permanent forest plot is being marked out at the Gurney's Pitta site in southern Thailand to enable further detailed research to be undertaken (Photographs). Supervisory visits were made to Thailand by RSPB staff in February 2005, September 2005 and February 2006. A scientific paper based upon research undertaken before the start of the Darwin project has been completed and will be published shortly. The paper compares bird diversity in forest with that in oil palm and rubber plantations in an attempt to quantify the biodiversity loss that accompanies loss of Gurney's Pittas when forest is converted to plantations. Unexpectedly, it was found that the structurally very different oil palm and rubber plantations support remarkably similar bird communities (Annex 3).

Although the Darwin project aims primarily to support the technical elements of the Species Recovery Plan, heightened awareness of the species developed largely through the recent research and conservation initiative has also led to positive developments in socio-economic areas of the Plan. A visit to southern Thailand by RSPB staff in September 2005 coincided with the opening in the core Gurney's Pitta area of a community forest project and community hall (see Photographs), a government funded scheme which will provide limited funds to villagers making sustainable use of the forest. The selection of this area for such a grant is likely to have been heavily influenced by the interest this project and preceding work has generated. Such interest has also stimulated the establishment in the area of a number of local groups, such as women's groups, who manufacture and sell items such as shirts depicting Gurney's Pitta to visiting tourists (see Photographs). The success of these schemes has led RSPB to support the appointment of a BCST Community Liaison Officer to work alongside the BCST researcher in implementing socio-economic aspects of the Recovery Plan. The funding of this post will be continued in the coming year by an award from the British Birdfair (see below).

Plans to support habitat restoration in southern Thailand are also proceeding well, and 2 local forest staff (one from the Wildlife Sanctuary, one from the Reserve Forest) have received intensive training in reforestation methods at the Forest Restoration Research Unit at Chiang Mai University (Photographs). This training has covered the areas of tree identification, specimen collection, seed collection and nursery establishment. Social and community aspects of forest restoration were also covered during field trips to FORRU's main demonstration site at the Hmong village of Mae Sa Mai. During the last two days of the training process, the two officers planned their own contributions to the project. Subsequently, on-site training in tree identification,

phenology trail establishment, seed collection and tree nursery techniques were provided in November 2005, January 2006 and March-April 2006. A large phenological collection has been made and a tree nursery established near the Gurney's Pitta site. A botanist from FORRU, Mr. J. F. Maxwell, made three visits to the site in October 2005, January 2006 and March 2006 to identify tree species indigenous to the area (totally 30 days work). By January, he had found over 90 forest tree species (Annex 4). Specimens collected during his latest trip are currently being processed, so the total number of species identified will probably be more than 100. This work included identification of 205 labelled trees of 68 species for phenology monitoring (Annex 5). In addition, a rapid survey of tree saplings and sprouting tree stumps, regenerating naturally in deforested areas, recorded at least 22 species (Annex 6). This work raised the possibility of applying ANR (accelerated natural regeneration) methods to rapidly recover Gurney's Pitta habitat in some areas, rather than slower and more costly tree planting. Consequently, we decided to establish field experiments to compare ANR plots with planted ones, this coming planting season.

A tree nursery has been built on local community property, in collaboration with (and with written permission from) the Ban Tiew Environment Group and village leaders (see photograph on front cover). In addition to producing trees for experimental plots, the nursery is also being used for educational activities for local school children. The nursery consists of an office/germination room, made of concrete, wood and chicken wire (to exclude seed predators) and a shaded standing down area, with a capacity for 10,000 saplings. Seed germination experiments and seedling production have commenced of 9 species of indigenous forest trees (*Vatica stapfiana*, *Garcinia speciosa*, *G. merguensis*, *Eugenia papillosa*, *E. syzygioides*, *E. grandis*, *Elaeocarpus petiolatus*, *Horsefieldia subglobosa* and *Diospyros* sp (Maxwell 06-172)). Propagation from wildlings has commenced of 5 species (*Adinandra integerrima*, *Garcinia merguensis*, *Schima wallichii*, *Eugenia grandis* and *Carallia brachiata*). The target is to increase wildling propagation to 16 species by the end of May in order to prepare for the planting season, since seedlings grown from seed will probably not be large enough. A study of the phenology of 68 local forest tree species (1 to 8 individuals each, depending on availability) has begun, with data collected in December, March and April. Monthly data collection will follow. The primary objective of this work is to determine when each species flowers and fruits to optimize seed collection times. From this work, seed production trees of 9 species have already been found and seeds collected (listed above).

Dr. Stephen Elliott and Mr. Cherdsak Kuaraksa (FORRU) provided on-site training, assisted with nursery establishment and liaised with local officials during two visits to the site in November-December 2005 and March-April 2006. The training reinforced the techniques observed during the training workshop in Chiang Mai and concentrated particularly on data recording techniques. The first trip dealt mainly with nursery planning and establishment, procuring materials and arranging for construction. We also established the phenology circuit, labelling over 200 trees and trained local staff in use of the phenology scoring system. The second trip dealt mainly with nursery techniques, how to carry out germination experiments, how to monitor seedling growth in the nursery, how to propagate wildlings and selecting sites for field experiments. Since the educational level of local staff is low, considerable training was required in data collection and recording. Although undoubtedly a great deal of knowledge about local forest tree species is being gained by the local staff as a result of this project, getting that information down on paper is proving to be more difficult

than anticipated. In addition, a great deal of time was spent in meetings with local forest officials, particularly the chiefs of the reserved forest and the wildlife sanctuary, and with local community leaders, especially the leader of the village environment group. A meeting was also attended at the South Regional Forest HQ in Surat Thani. The purpose of these meetings was to ensure all local stakeholders understand the aims of this project and to try to obtain official permission.

During the site visits, mentioned above, local forest staff arranged several trips around the area to suggest appropriate sites for field experiments. Three main sites were eventually selected. It soon became clear that deforested sites in the project area can be divided into two kinds: i) those deforested many years previously and subject to frequent fires so that they have become dominated by grasses and ii) recently deforested sites which retain an abundance of forest tree seedlings, saplings or live tree stumps (usually close to remaining forest). Only the former are suitable for tree planting, whilst the latter are more suitable for testing ANR methods, which involve nurturing remaining sources of forest regeneration. As a result of this observation, 2 sites were selected for the establishment of field trials in August 2006, one an area suitable for ANR experiments and one demarcated for planting with available tree species. This will include 1 rai (0.16 ha) at each site kept as control plots in which natural regeneration without any intervention will be monitored and compared with plots subject to experimental treatments.

In Myanmar progress has been more limited, due largely to the difficulties of recruiting a suitably experienced project officer. RSPB staff attended a workshop on Gurney's Pitta conservation in February 2005 designed to present to a larger audience (including the British Ambassador) recent developments and future directions in the conservation of Gurney's Pitta in Myanmar. RSPB staff also designed and led a strategic planning workshop for the host organisation in Myanmar, BANCA, in September 2005, helping the organisation to plan its future directions, in particular how to combine the benefits accrued through the two Darwin projects it is involved in. In December 2005 a Gurney's Pitta project officer, Aung Pyeh Khant, was appointed, and detailed maps of the survey area prepared using remotely sensed data. In February 2006, staff from RSPB and the BirdLife Indochina Programme accompanied the project officer and Dr Htin Hla (BANCA) on an expedition to southern Myanmar to develop field methods and assess access to the region. Field methods were developed and tested in the field and field survey forms designed. A plan of work for the coming breeding season has been drawn up. Gurney's Pitta appeared to be a reasonably common species in some areas, and was shown to respond well to playback, suggesting the future surveys should be readily achievable and that the species' presence can be easily and rapidly assessed. However access to many areas during the wet season will be extremely difficult. A fieldwork vehicle is in the process of being purchased, though purchase of 4WD vehicles in Myanmar is a complicated and time-consuming process.

The fight to save Gurney's Pitta received a considerable boost when, in August 2005, the British Birdfair elected to support the conservation of Gurney's Pitta as its annual project. Most of the £200,000 raised will go towards the establishment of Lenya National Park in southern Myanmar, an area which it is hoped will include the core centres of Gurney's Pitta population identified by the current project. A small proportion of this funding will go to support community development work at the Gurney's Pitta site in southern Thailand. The Birdfair provided the opportunity for staff of BCST (3 staff) and BANCA (2 staff) to visit the UK, to give presentations on

Gurney's Pitta to large British audiences, to discuss the project and to receive additional training in the UK. The opportunity was taken at the Birdfair to publicise both this project and another Darwin project "Building constituencies for site-based conservation in Myanmar".

### *Problems encountered*

Obtaining the necessary permissions to undertake work in Thailand has presented obstacles, despite the Department of National Parks being a partner in the project. This has entailed numerous meetings with national, regional and local forest authorities, which although time consuming has had the benefit of advocating the project more widely.

Unfortunately, Kuhn Iss from the Wildlife Sanctuary seems to have dropped out from this project without notice. Numerous attempts to contact him during the latest visit to the site failed. He has not submitted any reports or recorded his work in the project log book for the last 3 months. His work partner Kuhn Taweesak reported to us that Kuhn Iss had worked only ½ day on this project the previous month. Therefore, at the end of our last trip to the site, we delivered a written request to the new WS chief, Kuhn Wasan Klomchinda, asking him to appoint a suitable replacement for Kuhn Iss. Finding the extra time and budget needed to train the replacement may present a problem, as it is not part of the original project proposal. Until such time as a replacement for Kuhn Iss is nominated by the Wildlife Sanctuary, Kuhn Taweesak has been provided with funds to employ untrained casual labour to help him with his work in the nursery at a daily rate. We will need to address the problem of having so few trained staff on site, for example through training of colleagues by the trained staff.

During discussions with Dr. David Blakesley in the UK in September 2005, he requested that his visit to the project site to provide additional expertise on tree propagation and begin work on a forest restoration strategy for the area be delayed until the second administrative year (i.e. September or October 2006). In view of the delay in getting this project started due to permission problems, a delay in Dr. Blakesley's visit makes sense because by October 2006, a lot more data will be available on which to base the forest restoration strategy.

In Myanmar, the difficulty of finding a suitable qualified project officer delayed start of work there. A number of candidates were interviewed, but only one was suitably qualified (and is, in fact, better qualified than we could have hoped for). The region where work will take place has a poor security situation, being home to a number of insurgency groups. However we are fortunate that the project officer is a native of southern Myanmar who is aware of the potential problems and dangers and is well connected locally.

### *Workplan for next period*

The workplan for the next period will follow the detailed workplan provided in the original application. Key future actions are listed in Annex 1.

## **5. Response to previous reviews**

Not applicable, this is the first annual review of this project.

## **6. Partnerships**

The project has been very successful at developing and enhancing partnerships. There is now very close collaboration between BCST and the research division of the National Parks Department in Thailand. Previously, relations were strained as the NGOs, instead of seeking to work with and help the relevant government departments, instead criticised their failures. The project has also built closer relations between BCST and RSPB, who are now jointly developing another project, on Thailand's threatened Inner Gulf. RSPB are also helping BCST with its organisational development. RSPB's involvement with BANCA and BCST has allowed us to help these organisations develop institutionally. The project has also built better relations between NGOs and local communities in the key Gurney's Pitta area in southern Thailand. Some of the local community leaders formerly most opposed to BCST/RSPB activities in the area are now strongly supportive, and some are working to establish an ecotourism company. The project also supports, through its contribution to the National Parks Department, regular meetings of the Gurney's Pitta Recovery Plan Steering Committee, bringing together a very wide range of stakeholders from government, NGOs and local communities in an amicable forum which respects a range of views formerly held to be incompatible. The committee is headed by a Privy Councillor, giving the project access to the Thai Royal Family. For example, it is hoped that the Queen's birthday will be used by local people as an opportunity to reforest land that has been illegally cleared. Progress of the project is regularly explained at meetings of this committee.

This project and another Darwin project ("Building constituencies for site-based conservation in Myanmar"), together with the British Birdfair and GCF, are all working together to secure protection of a vast national park, the establishment and protection of which will ensure the continued survival of Gurney's Pitta. Project staff of the current project attended and contributed to a BANCA strategic planning workshop organised as part of the Darwin project "Building constituencies for site-based conservation in Myanmar".

Some working relations have become strained over problems of obtaining official permission to undertake work in Thailand (see above). However steps are being taken to reduce this problem.

## **7. Impact and sustainability**

As stated above, the high profile of this project has already led to some additional developments, such as the establishment of groups of local people with a vested interest in the forest's protection, the start of a community forest grant and the opening of a new community hall. The contribution to work in Thailand of the British Birdfair will capitalise on this impact by employing a full time community liaison officer to help local people generate a living in a sustainable way. Gurney's Pitta is now the highest profile bird species in Thai conservation, and the bird species receiving the most attention from researchers. In Myanmar, nature conservation has a far lower profile and raising awareness is difficult because of the political situation.



## 8. Output, outcomes and dissemination

*Outputs behind schedule:* A Thai website has been established, but a multi-lingual website has yet to be established. Project staff in Myanmar recruited late; nevertheless, analyses of forest types were completed on time.

*Outputs achieved ahead of schedule:* The tree nursery, planned for completion in Year 2, has been built and stocked, and is already in use. Reforestation is already in progress, ahead of schedule.

*Additional outputs achieved:* Programme of research on snakes started in southern Thailand through partnership with National Parks Department research division.

Outputs are given in Table 1, following standard output measures.

Table 1. Project Outputs (According to Standard Output Measures)

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	TOTAL
4C	10 Thai conservationists attended 3-day training workshop in advanced bird survey methods, followed by 1 week of field training  2 conservationists in Myanmar received 1 week of field training	12				12
5	2 Thai forest staff receive 1 year of training in reforestation methods	2				2
5	2 Thai researchers receive 1 year of training in ornithological methods	2				2
8	Weeks spent by UK project staff in host countries	9				9
12A	3 databases established	3				3
13A	1 seed and tree reference	1				1

	collection established in Thailand		
14B	3 presentations on BCST's work on Gurney's Pitta delivered at national birdfairs in UK, Thailand and Taiwan	3	3
15A	National press release in Thailand	1	1
20	Physical assets worth £12,200 handed over to host countries	£12,200	£12,200
21	1 tree nursery established	1	1
22	1 permanent forest study plot established	1	1
23	Matched funding from RSPB and BirdLife Indochina programme	£22,000	£22,000

## 9. Project expenditure

## **10. Monitoring, evaluation and lessons**

The UK project leader has visited the region three times during the reporting period, attempting to meet project partners at each visit. At such meetings, progress was assessed and communicated to other project partners. One of the indicators in the logical framework (“Population in southern Thailand does not fall below 5 males and 5 females”) was assessed empirically through survey work and found to be met. Many of the other indicators in the logical framework have been at least partially achieved (Annex 1).

The training provided has demonstrably affected the working of some researchers in Thailand, and many of the methods taught, such as radio tracking, are now being used. For example, a permanent monitoring plot similar to that used for workshop training at Khao Yai has now been established at the Gurney’s Pitta site in southern Thailand.

## **11. Outstanding achievements**

### **■ I agree for ECTF and the Darwin Secretariat to publish the content of this section**

The full survey carried out in southern Thailand in 2006 was a major undertaking which showed that the tiny Gurney’s Pitta population there has finally been stabilised and that illegal clearance of forest has fallen to virtually nothing. This represents a major success of a substantial programme of work of which this project represents an important part. The building and stocking this year of a tree nursery, the training of local forest staff in its management and use, better coordination of forest patrols and significant changes in local communities’ perception of the conservation effort all mark the start of a new phase in preventing the extinction of this species in southern Thailand.

## *Annexes*

- Annex 1 Log-frame and achievements
- Annex 2 Map showing the distribution of Gurney's Pitta at Khao nor Chuchi, southern Thailand, in relation to land demarcation and altitude.
- Annex 3 Abstract of paper currently in press. Research for this work was undertaken before the start of the Darwin project, but write-up was completed during it.
- Annex 4 List of indigenous forest tree species identified at Kow Pra-Bahng Krahm Wildlife Sanctuary, Klong Rowm District, Krabi
- Annex 5 List of marked trees for phenological recording, recorded by FORRU in Gurney's Pitta habitat at Khao nor Chuchi, southern Thailand
- Annex 6 List of regenerating trees recorded by FORRU in cleared habitat at Khao nor Chuchi, southern Thailand
- Annex 7 Map of survey areas in southern Myanmar

***Photographs*** start on page 25

Project summary	Measurable Indicators	Progress and Achievements April 2005-Mar 2006	Actions required/planned for next period
<p><b>Goal:</b> To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve</p> <ul style="list-style-type: none"> <li>• The conservation of biological diversity,</li> <li>• The sustainable use of its components, and</li> <li>• The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources</li> </ul>			
<p><b>Purpose</b> <i>A framework for the conservation of Gurney's Pitta established and strategic conservation measures implemented in Thailand and Myanmar</i></p>	<p><i>All activities in Gurney's Pitta Species Recovery Plan in Thailand requiring external expertise initiated by end of project</i></p> <p><i>Project proposals developed and submitted for all activities in Species Recovery Plan in Myanmar</i></p>	<p>All activities requiring external expertise have now been initiated in Thailand.</p> <p>Research necessary to develop a Species Recovery Plan in Myanmar is now underway.</p>	<p><i>Key actions for next period:</i></p> <ul style="list-style-type: none"> <li>- <i>continue bird research in Thailand and Myanmar and make results available to key stakeholders</i></li> <li>- <i>continue training of forest staff in Thailand and ensure spread of expertise</i></li> <li>- <i>establish experimental reforestation plots in Thailand</i></li> <li>- <i>attempt to resolve issues of permission in Thailand</i></li> <li>- <i>establish project web site</i></li> </ul>
<p><b>Outputs</b></p>			
<p>Knowledge of GP numbers, distribution and ecological needs across its range is provided to GP stakeholders</p>	<p>Gurney's Pitta stakeholders have access to recent research results by end of Year 3</p>	<ul style="list-style-type: none"> <li>• Full survey in southern Thailand started and completed; results communicated to local forest protection staff</li> <li>• Continuing ecological research in Thailand; results communicated to local forest protection staff</li> <li>• A new study on snake populations in the core area has</li> </ul>	<p><i>Key actions for next period:</i></p> <ul style="list-style-type: none"> <li>- <i>produce and submit papers on results of research in Thailand</i></li> <li>- <i>analyse results of first season's research in Myanmar and develop research protocol for second year as appropriate</i></li> <li>- <i>radio track Gurney's Pittas</i></li> </ul>

		<p>been initiated, following recognition of the importance of snakes as key Gurney's Pitta nest predators</p> <ul style="list-style-type: none"> <li>• Permanent research plot established in Thailand</li> <li>• Radio-tracking methods tested on other Pitta species</li> <li>• Field expedition to southern Myanmar, survey design tested, field staff appointed and equipment purchased</li> </ul>	<p><i>to determine home range size and habitat selection, assuming permission is provided</i></p>
Measures to prevent the extinction of Gurney's Pitta in Thailand are in place	Population in S Thailand does not fall below 5 males and 5 females	<ul style="list-style-type: none"> <li>• Intensive nest protection ongoing</li> <li>• Trails remain closed during breeding season to prevent disturbance</li> <li>• Population remains well above 5 pairs</li> </ul>	<p><i>Key actions for next period:</i></p> <ul style="list-style-type: none"> <li>- <i>continue intensive nest protection</i></li> <li>- <i>monitor population and monitor habitat loss</i></li> </ul>
A strategy for Gurney's Pitta habitat restoration across the species' former range in southern Thailand is developed and agreed	Restoration projects that are part of the strategy are submitted to funders by end Yr 2	<ul style="list-style-type: none"> <li>• Research into optimal reforestation methods and sites initiated</li> <li>• Forest staff trained and tree nursery established</li> <li>• Sites for experimental reforestation identified</li> <li>• Local forest staff briefed on progress</li> </ul>	<p><i>Key actions for next period:</i></p> <ul style="list-style-type: none"> <li>- <i>continue training of forest staff in reforestation methods</i></li> <li>- <i>establish experimental reforestation plots</i></li> <li>- <i>increase number of species cultivated in tree nursery</i></li> <li>- <i>maintain good liaison with local forest staff and resolve permission issues</i></li> </ul>
Conservation strategy for key sites in Myanmar is produced	Species Recovery Plan for Myanmar produced, agreed and published by end Yr 3	<ul style="list-style-type: none"> <li>• Liaison meetings held with Government officials and local forestry staff</li> <li>• Research to identify key sites is</li> </ul>	<p><i>Key actions for next period:</i></p> <ul style="list-style-type: none"> <li>- <i>continue to generate information necessary to</i></li> </ul>

		<p>now underway</p> <ul style="list-style-type: none"> <li>• Potential ranged modelled using satellite data</li> </ul>	<p><i>inform recovery plan</i></p> <ul style="list-style-type: none"> <li>- <i>ensure integration of data into plans for Lenya NP extension</i></li> </ul>
Capacity of Thai and Myanmar conservationists to undertake further conservation is increased	New research and management projects developed and undertaken by end Yr 1 (in Thailand) or end Yr 3 (Myanmar)	<ul style="list-style-type: none"> <li>• Training of conservation staff in Thailand and Myanmar in survey design and advanced ornithological methods</li> <li>• Training of forestry staff in Thailand on replanting methods</li> <li>• Tree nursery established</li> </ul>	<p><i>Key actions for next period:</i></p> <ul style="list-style-type: none"> <li>- <i>continue to provide formal and experiential training to key researchers in Thailand and Myanmar</i></li> <li>- <i>maintain tree nursery and ensure best practice</i></li> </ul>

**Annex 2: results of full survey in 2005**



### **Annex 3. Summary from paper in press**

Bird Conservation International (2006) 16:000–000. . BirdLife International 2006  
doi:10.1017/S0959270906000062 Printed in the United Kingdom

## **Changes in bird communities following conversion of lowland forest to oil palm and rubber plantations in southern Thailand**

SIRIRAK ARATRAKORN, SOMYING THUNHIKORN and PAUL F. DONALD

### **Summary**

This paper describes changes in bird communities following the conversion of lowland forest to commercial oil palm and rubber plantations. Conversion of forest to plantations resulted in a reduction in species richness of at least 60%, with insectivores and frugivores suffering greater losses than more omnivorous species. Of the 128 species recorded across all habitats, 84% were recorded in forest, and 60% were recorded only in that habitat. Of the 16 Globally Threatened or Near-Threatened species recorded in the study, 15 were recorded only in forest. Species occurring in plantations were significantly more widespread in Thailand than species recorded only in forests and had a tendency towards smaller body size. Species richness in plantations was unaffected by plantation age or distance from nearest forest edge, but was significantly greater where undergrowth was allowed to regenerate beneath the crop trees. Bird communities in oil palm and rubber plantations were extremely similar, and there was a strong positive correlation across species in their relative abundance in each plantation type. The results indicate that a high proportion of species formerly present in the region are unable to adapt to conversion of forest to oil palm and rubber plantations, resulting in large losses of bird species and family richness and the replacement of species with restricted ranges and high conservation status by those with extensive ranges and low conservation status. Initiatives that reduce pressure to clear new land for plantations, for example by increasing productivity in existing plantations and improving protected area networks, are likely to be more effective in conserving threatened forest birds than initiatives to improve conditions within plantations, though both should be encouraged.

**Annex 4** - Indigenous forest tree species identified at Kow Pra-Bahng Krahm Wildlife Sanctuary, Klong Rowm District, Krabi by J. F. Maxwell (as of January 2006; some identifications still pending).

1. <i>Schima wallichii</i> (DC.) Korth.	Theaceae
2. <i>Vitex pinnata</i> L.	Verbenaceae
3. <i>Helicia excelsa</i> (Roxb.) Bl.	Proteaceae
4. <i>Chionanthus</i> (probably <i>ramiflous</i> Roxb.)	Oleaceae = 66?
5. <i>Carallia brachiata</i> (Lour.) Merr.	Rhizophoraceae
6. <i>Barringtonia</i> sp	Lecythidaceae
7. <i>Castanopsis schefferiana</i> Hance	Fagaceae
8. <i>Callerya atropurpurea</i> (Wall.) Schot	Leguminoseae, Papilionoideae
9. <i>Dillenia obovata</i> (Bl.) Hoogl.	Dilleniaceae
10. <i>Archidendron contertan</i> (Mart.) I. Niels.	Leguminoseae, Mimosoideae
11. Identification pending	?
12. <i>Symplocos</i> sp	Symplocaceae
13. <i>Calophyllum</i> sp	Guttiferae
14. <i>Oroxylum indicum</i> (L.) Kurz	Bignoniaceae
15. <i>Morinda elliptica</i> (Hk.f.) Ridl.	Rubiaceae
16. <i>Garcinia merguensis</i> Wight	Guttiferae
17. Identification pending	Sapotaceae
18. <i>Alstonia macrophylla</i> Wall. ex G. Don	Apocynaceae
19. <i>Cinnamomum iners</i> Reinw. ex Bl.	Lauraceae
20. <i>Saraca indica</i> L.	Leguminoseae, Caesalpinioideae
21. <i>Horsfieldia irya</i> (Gaertn.) Warb.	Myristicaceae
24. <i>Hopea odoerata</i> Roxb.	Dipterocarpaceae
25. <i>Elaeocarpus stipularis</i> Bl.	Elaeocarpaceae
26. <i>Garcinia</i> (aff. <i>rostrata</i> (Hassk.) Miq.)	Guttiferae
27. <i>Eugenia</i> sp	Myrtaceae
28. = 51?	
29. <i>Symplocos cochinchinensis</i> (Lour.) S. Moore ssp.?	Symplocaceae
30. <i>Crypteronia paniculata</i> Bl. var. <i>paniculata</i>	Crypteroniaceae
31. <i>Flacourtia</i> (probably <i>indica</i> (Burm.f.) Merr.)	Flacourtiaceae
32. <i>Diospyros undulata</i> Wall. ex G. Don var. <i>cratericalyx</i> (Craib) Bakh.	Ebenaceae
33. <i>Eugenia grandis</i> Wight	Myrtaceae

34. <i>Cratoxylum formosum</i> (Jack) Dyer ssp. <i>pruniflorum</i> (Kurz) Gog.	Guttiferae, Hypericaceae
35. <i>Litsea</i> sp	Lauraceae
36. <i>Vatica odorata</i> (Griff.) Sym	Dipterocarpaceae
37. <i>Ilex</i> ?	Aquifoliaceae
38. <i>Shorea (foxworthii)</i> Sym.)	Dipterocarpaceae
39. <i>Eugenia</i> sp	Myrtaceae
40. <i>Dipterocarpus kerrii</i> King	Dipterocarpaceae
41. <i>Mesua ferrea</i> L.	Guttiferae
42. <i>Peltophorum pterocarpum</i> (DC.) Back. ex K. Hey.	Leguminosae, Caesalpinioideae
43. <i>Microcos paniculata</i> L.	Tiliaceae
44. <i>Lithocarpus</i> sp	Fagaceae
45. <i>Canthium</i> sp	Rubiaceae
46. <i>Vatica stapfiana</i> (King) Sloot.	Dipterocarpaceae
47. Identification pending	Meliaceae
48. <i>Beilschmiedia</i> sp	Lauraceae
49. <i>Shorea</i> sp	Dipterocarpaceae
50. <i>Ilex</i> sp	Aquifoliaceae
51. <i>Alstonia scholaris</i> (L.) R. Br.	Apocynaceae
52. <i>Chaetocarpus castanocarpus</i> (Roxb.) Thw.	Euphorbiaceae =27?
53. <i>Pterospermum</i> sp	Sterculiaceae
54. <i>Bhesa paniculata</i> Arn.	Celastraceae
55. <i>Eugenia</i> sp	Myrtaceae
56. <i>Mangifera linearifolia</i> Kosterm.	Anacardiaceae
57. Identification pending	Sapotaceae
58. ? <i>Polyalthia</i>	Annonaceae
59. <i>Endocomia macrocoma</i> (Miq.) Wilde ssp. <i>prainii</i> (King) Wilde	Myristicaceae
60. <i>Chisocheton</i> sp	Meliaceae
61. <i>Durio griffithii</i> (Mast.) Bakh.	Bombacaceae
62. <i>Madhuca mottleyana</i> (de Vr.) Baeh.	Sapotaceae
63. Unknown	?
64. Identification pending	Rubiaceae
65. Identification pending	?
66. <i>Eugenia papillosa</i> Duth.	Myrtaceae

67. = 4?	
68. <i>Ixora diversifolia</i> Wall. ex Kurz	Rubiaceae
69. <i>Caryota</i> (? maxima Bl.)	Palmae
70. <i>Ficus</i> sp	Moraceae
71. <i>Pajanelia longifolia</i> (Willd.) K. Sch.	Bignoniaceae
72. <i>Radermachera pinnata</i> (Blanco) Steen. ssp. <i>acuminata</i> (Steen.) Steen.	Bignoniaceae
73. <i>Eugenia operculata</i> Roxb.	Myrtaceae
74. Unknown	?
75. <i>Hypobathrium racemosum</i> (Roxb.) Kurz	Rubiaceae
76. <i>Diospyros venosa</i> Wall. ex A. DC.	Ebenaceae
77. <i>Anthocephalus chinensis</i> (Lmk.) A. Rich. ex Walp.	Rubiaceae
78. <i>Shorea</i> sp	Dipterocarpaceae
79. <i>Eugenia</i> sp	Myrtaceae
80. <i>Ligustrum confusum</i> Decne.	Oleaceae
81. <i>Pometia pinnata</i> J. R. & G. Forst.	Sapindaceae
82. ? <i>Elaeocarpus</i> sp	Elaeocarpaceae
83. <i>Ficus</i> aff. <i>microcarpa</i> L.f.	Moraceae
84. <i>Polyalthia</i> ( <i>jenkensis</i> (Hk. f. & Th.) Hk. f. & Th.)	Annonaceae
85. <i>Trevesia valida</i> Craib	Araliaceae
86. <i>Duabanga grandiflora</i> (Roxb. ex DC.) Walp.	Sonneratiaceae
87. <i>Dysoxylum</i> sp	Meliaceae
88. <i>Ficus variegata</i> Bl.	Moraceae
90. <i>Triadica cochinchinensis</i> Lour.	Euphorbiaceae
91. <i>Toona ciliata</i> M. Roem.	Meliaceae
92. <i>Lansium</i> aff. <i>domesticum</i> Corr.	Sapindaceae
93. <i>Tetrameles nudiflora</i> R. Br. ex Benn.	Datisceae
94. <i>Mangifera</i> (not indica L.)	Anacardiaceae

**Annex 5** Tree species (and number of trees of each) labeled, identified and currently being studied for phenology of flowering, fruiting and leafing

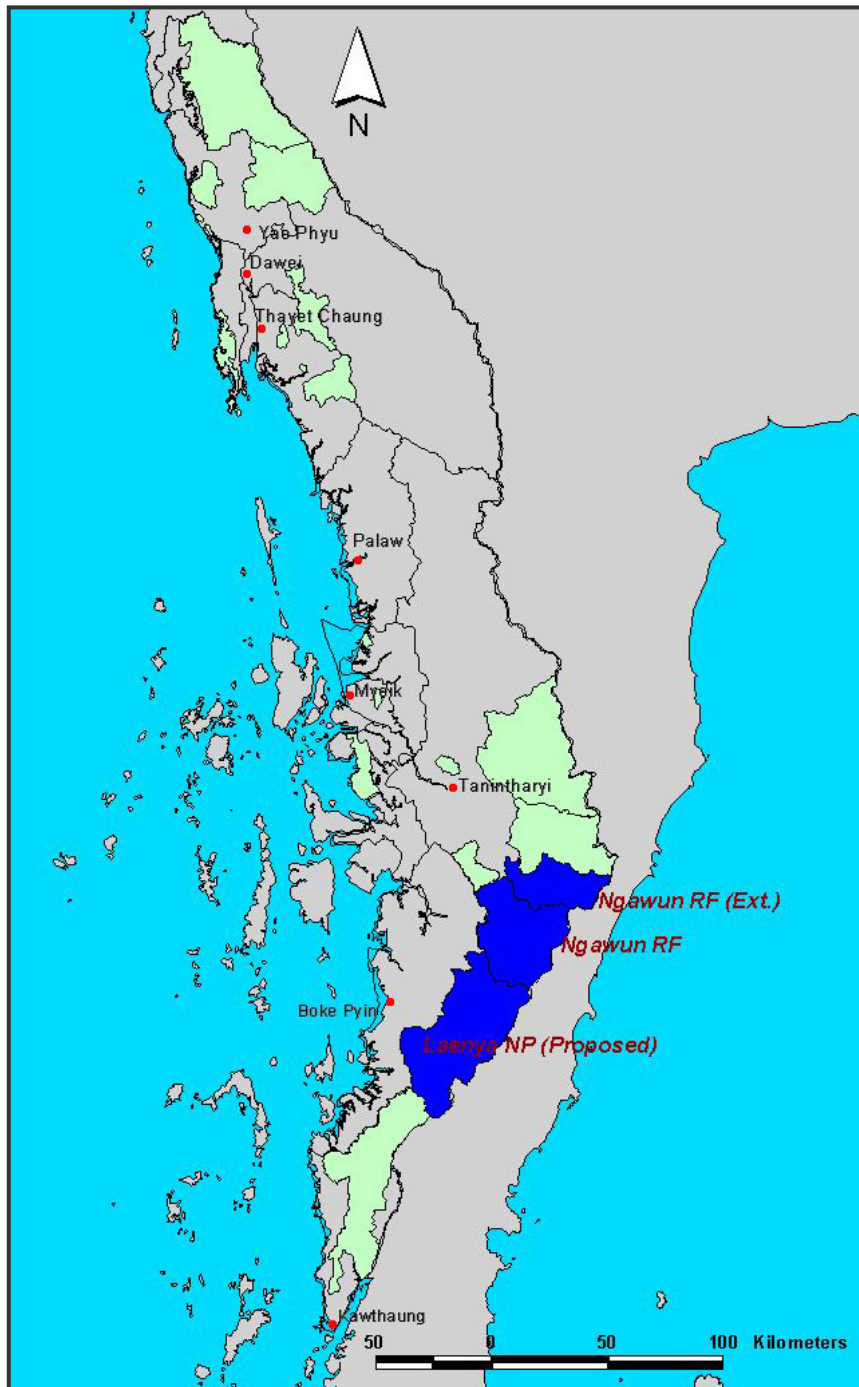
Scientific Name	No. Trees labeled
<i>Alstonia macrophylla</i>	7
<i>Alstonia scholaris</i>	3
<i>Anthocephalus chinensis</i>	2
<i>Antidesma sp.</i>	1
<i>Antidesma sp. (06-171)</i>	1
<i>Antidesma sp. (06-225)</i>	3
<i>Aporusa aurea</i>	1
<i>Aquilaria crassna</i>	1
<i>Artocarpus lakoocha</i>	2
<i>Artocarpus sp.(m62)</i>	2
<i>Canthium glabrum</i>	1
<i>Carallia brachiata</i>	4
<i>Castanopsis schefferiana</i>	5
<i>Chaetocarpus castanocarpus</i>	4
<i>Chionanthus ramiflorus</i>	2
<i>Cinnamomum iners</i>	5
<i>Cotylelobium melanoxyton</i>	2
<i>Cratoxylum formosum</i>	2
<i>Dillenia obovata</i>	5
<i>Diospyros sp. (06-176)</i>	1
<i>Diospyros venosa</i>	5
<i>Dipterocarpus grandiflorus</i>	1
<i>Dipterocarpus kerrii</i>	4
<i>Durio griffithii</i>	1
<i>Elaeocarpus petiolatus</i>	1
<i>Elaeocarpus stipularis</i>	6
<i>Eriobotrya bengalensis</i>	6
<i>Erythroxylum cuneatum</i>	1
<i>Eugenia claviflora (06-224)</i>	1
<i>Eugenia cumini</i>	2
<i>Eugenia grandis</i>	7
<i>Eugenia grata</i>	1
<i>Eugenia papillosa</i>	5

<i>Eugenia sp. (m38)</i>	2
<i>Eugenia syzygioides</i>	5
<i>Fagraea fragrans</i>	1
<i>Ficus benjamina</i>	2
<i>Ficus hispida var.hispida</i>	1
<i>Garcinia merguensis</i>	4
<i>Garcinia speciosa</i>	5
<i>Gluta sp.</i>	5
<i>Harpullia sp. (06-213)</i>	2
<i>Homalium sp. (06-186)</i>	1
<i>Hopea avellanea</i>	1
<i>Horsfieldia subglobosa(06-172)</i>	3
<i>Ilex sp.</i>	1
<i>Lepisanthes rubiginosa</i>	1
<i>Litsea grandis</i>	1
<i>Madhuca motleyana</i>	3
<i>Madhuca malaccensis</i>	5
<i>Mangifera linearifolia</i>	2
<i>Mesua ferrea</i>	1
<i>Microcos paniculata</i>	5
<i>Millettia atropurpurea</i>	6
<i>Morinda elliptica</i>	7
<i>Peltophorum pterocarpum</i>	5
<i>Radermachera pinnata</i>	3
<i>Rhus sp.</i>	1
<i>Saraca indica</i>	4
<i>Schima wallichii</i>	6
<i>Scolopia spinosa</i>	5
<i>Sterculia lanceolata</i>	1
<i>Stereospermum fimbriatum</i>	3
<i>Toona ciliata</i>	3
<i>Unknown</i>	2
<i>Vatica odorata</i>	4
<i>Vatica stapfiana</i>	1
<i>Vitex pinnata</i>	8

**Annex 6.** Species of trees found establishing naturally in deforested areas – providing an indication of the potential for ANR (accelerated natural regeneration) to recover Gurney’s Pitta habitat.

Scientific Name	Family
<i>Aquilaria crassna</i>	Thymelaeaceae
<i>Castanopsis schefferiana</i>	Fagaceae
<i>Chaetocarpus castanocarpus</i>	Euphorbiaceae
<i>Cinnamomum iners</i>	Lauraceae
<i>Cratoxylum formosum</i>	Guttiferae
<i>Dillenia obovata</i>	Dilleniaceae
<i>Ficus chartacea ex Kurs</i>	Moraceae
<i>Ficus hispida var.hispida</i>	Moraceae
<i>Garcinia speciosa</i>	Guttiferae
<i>Hibiscus macrophyllus</i> Roxb.	Malvaceae
<i>Knema furfuracea</i> Warb.	Myristicaceae
<i>Litsea umbellata</i> Merr.	Lauraceae
<i>Macaranga tanarius</i> Muell.Arg.	Euphorbiaceae
<i>Millettia atropurpurea</i>	Leguminosae (P)
<i>Morinda elliptica</i>	Rubiaceae
<i>Rhus rhetzoides</i> Craib	Anacardiaceae
<i>Semecarpus cochinchinensis</i> Engler	Anacardiaceae
<i>Toona ciliate</i>	Meliaceae
<i>Trema orientalis</i> BL.	Ulmaceae
<i>Triadi cochinchinensis</i> Lour.	Euphorbiaceae
<i>Vitex pinnata</i>	Verbenaceae
<i>Zanthoxylum collinsae</i> Craib	Rutaceae

**Annex 7.** Map of the study area in southern Myanmar. Research will focus on Ngawun Reserve Forest (RF) and its extension.





## Photographs

**Front cover:** Tree nursery established at Khao Phra Bang Khram Wildlife Sanctuary, southern Thailand. This nursery has been completed early and is already in use, both for reforestation and for training and research purposes. The shaded standing-down area is visible in the background.

### Thailand

- Photo 1 Forestry students learning how to measure sapling growth in the newly established tree nursery
- Photo 2 Staff of BCST and the Department of National Parks marking out a permanent study plot in the core Gurney's Pitta area at Khao Nor Chuchi. This will allow future radio tracking and measurement of forest change.
- Photo 3 Training Thai researchers from BCST and the Department of National Parks in advanced bird study methods; catching and ringing birds
- Photo 4 Training Thai researchers from BCST and the Department of National Parks in advanced bird study methods; radio-tracking
- Photo 5 Training Thai researchers from BCST and the Department of National Parks in advanced bird study methods; activating the radio tags
- Photo 6 A welcome development; a local women's group meets to share the profits of sales of goods to tourists. Ecotourism is vital to future of forest conservation at Khao Nor Chuchi, and is a new development
- Photo 7 Monks consecrate the opening of a new community forest project at the core Gurney's Pitta site in southern Thailand. This is a direct result of conservation efforts there

### Myanmar

- Photo 8 Strategic planning workshop for BANCA held in Myanmar in September 2005, attended and led by project staff
- Photo 9 Meeting in February 2005 to highlight and publicise work on Gurney's Pitta in Myanmar. This was attended by the British Ambassador. The speaker is Dr Htin Hla of BANCA
- Photo 10 As in Thailand, the main problem in Myanmar is oil palm. This picture shows a huge oil palm nursery on land recently occupied by lowland forest. The forest in the background holds Gurney's Pittas
- Photo 11 Access in the forest is difficult, in places the only access is to wade along forest streams

- Photo 12      Although shy and secretive, preliminary results suggest that Gurney's Pitta responds readily to tape recordings of its song and call. Project officer Aung Pyeh Khant uses a portable speaker to detect birds
- Photo 13      Vehicular access is extremely difficult in southern Myanmar. During the wet season, most roads are impassable
- Photo 14      The scale of the problem; last year, this was all forest supporting Gurney's Pittas. Now it has all been converted to oil palm



